

S E C R E T

APPENDIX APLANTS FOR THE PRODUCTION OF SYNTHETIC AND RECLAIMED RUBBERA. Synthetic Rubber

All known synthetic rubber plants in areas of the Free World are listed, with production by plant if known.

In such countries as Sweden and Italy, where plant facilities exist for the production of synthetic rubber but where no rubber is presently being produced, capacities as known are given.

For the United States, it is noted that feed stock plants (plants which produce styrene or butadiene for final processing by co-polymer plants) are also listed. As can be seen by this list, all the styrene used as feed stock is made in only six plants, and destruction of any one of these plants would reduce by that much the output of GR-S (butadiene-styrene rubber) until the unit could be restored to production. Butyl rubber, important for manufacture of inner tubes, is produced in only two plants, and neoprene in but one plant. Thus styrene, butyl, and neoprene, all of which are highly important to the rubber industry of the United States, appear to be the most vulnerable points in the synthetic rubber industry.

B. Reclaimed Rubber

Locations and names of installations for the reclaiming of rubber are given, where known, for all countries. Information on such facilities is not regularly reported, and cannot be considered for certain countries (for example, France) which reportedly has considerable capacity for reclaimed rubber, but for which no data on locations of plants or actual output are available.

Reclaimed rubber is a very valuable raw material and serves as an important factor in enabling countries to increase rubber fabrication at relatively small cost in comparison to synthetic and natural rubber. The facilities for reclaiming are not difficult or expensive to provide and production can be increased or decreased as desired with relative ease.

- A-1 -

S E C R E T

S E C R E T

APPENDIX A.Part A.SYNTHETIC RUBBER PLANTS IN THE FREE WORLD AREA DURING 1951

<u>Location</u>	<u>Name of Plant</u>	<u>Design Capacity^{a/}</u> (in long tons)	<u>Production^{b/}</u>
<u>NORTH AMERICA</u>			<u>907,443</u>
<u>CANADA</u>			<u>62,293</u>
Sarnia, Ontario	Polymer Corporation		62,293
<u>UNITED STATES^{c/}</u>			<u>845,151</u>
<u>Copolymer plants (GRS and N)</u>			
Akron, Ohio	Firestone Tire & Rubber Co.	25,000	
	*Firestone	2,000	
	*Goodrich	9,000	
	*Goodyear	9,000	
	Goodyear Synthetic Rubber Corp.	23,000	
Baton Rouge, La.	Copolymer Corp.	43,000	
	*U.S. Rubber Co.	7,000	
Baytown, Texas	General Tire & Rubber Co.	37,000	
Boston, Mass.	*Doway & Almy	3,000	
Borger, Texas	Phillips Chemical Co.	54,000	
Houston, Texas	Goodyear Synthetic Rubber Corp.	87,000	
Institute, W. Va.	B.F. Goodrich Chemical Co.	113,000	
Louisville, Ky.	*B.F. Goodrich Co.	15,000	
	Kentucky Synthetic Rubber Corp.	37,000	
Lake Charles, La.	Firestone Tire & Rubber Co.	86,000	
Midland, Mich.	Dow Chemical Co.	3,000	
Naugatuck, Conn.	U.S. Rubber Co.	25,000	
Port Neches, Texas	B.F. Goodrich Co.	78,000	
	U.S. Rubber Co.	76,000	
Torrance, Calif.	Midland Rubber Corp.	76,000	
		<u>808,000</u>	<u>712,149^{d/}</u>
<u>Neoprene plants</u>			
Louisville, Ky.	*E.I. DuPont de Nemours & Co.	60,000	58,907
		60,000	
<u>Butyl plants</u>			
Baton Rouge, La.	Esso Standard Oil Co.	40,000)**	
Baytown, Texas	Humble Oil & Refining Co.	40,000)	
		80,000	74,105
Total, U.S. synthetic rubber capacity		948,000	
<u>Feedstock plants (in short tons)</u>			
<u>Extensions</u>			
Baton Rouge, La.	*Esso Standard Oil Co.	20,000	
	Copolymer Corp.	22,000	
Baytown, Texas	Humble Oil & Refining Co.	43,000	
Borger, Texas	Phillips Chemical Co.	60,000	
Robata, Pa.	Koppers Co., Inc.	105,000***	
Lake Charles, La.	Cities Service Refining	62,000	
Louisville, Ky.	Carbide & Carbon Chemicals Corp.	70,000***	
Midland, Mich.	*Dow Chemical Co.	2,000	
Port Neches, Texas	Neches Butane Products Co.	168,000	
Texas City, Texas	*Carbide & Carbon Chemical Corp.	6,000	
Houston, Texas	Sinclair Rubber, Inc.	78,000	
Torrance, Calif.	Shell Chemical Corp. & Standard Oil Co. of California	45,000	
		<u>753,000</u>	<u>683,000</u>

- A-2 -

S E C R E T

S E C R E T

APPENDIX A. (Cont'd)

<u>Location</u>	<u>Name of Plant</u>	<u>Design Capacity^{a/}</u> (in long tons)	<u>Production^{b/}</u>
<u>Styrene</u>			
Institute, W. Va.	*Carbide & Carbon Chemical Corp.	15,000	
Kobuta, Pa.	*Koppers Co., Inc.	50,000	
Midland, Mich.	*Dow Chemical Co.	36,000	
Texas City, Texas	*Monsanto Chemical Co.	65,000	
Torrance, Calif.	Dow Chemical Co.	57,000	
Valasco, Texas	*Dow Chemical Co.	100,000	
		323,000	
<u>WESTERN EUROPE</u>			
<u>FRANCE</u>	Planned		922
<u>GERMANY, WEST</u>			929
Mils Leverkusen	Chemische Werke Mils Bayerwerke		
<u>ITALY</u>			None
Ferrara Terni	Pirelli & I. R. I.	12,000 N.A.	
<u>SWEDEN</u>			None
Lugavik Stockvik Uppsala		800 800 Experimental	
<u>GRAND TOTAL</u>			908,377

- a. Design capacity is given where available to show possible production.
 b. Production is given to show actual output. In the U. S. information is not available as to actual production by plant.
 c. Polymerization plants and feed stock plants are given where known. The use of oil extenders and the cold rubber process of synthetic rubber production has increased plant capacities. The polymerization capacities have been increased in the last two years, and the capacities, as shown, represent 1952 information.
 d. Includes 696,811 tons GR-S and 15,333 tons N-type rubber.
- * Privately owned facilities, all copolymer plants include N and GR-S types of rubber.
 ** Increased to 90,000 tons capacity.
 *** In addition, there is one unit of approximately 35,000 ST/Yr capacity in standby at this plant.

- A-3 -

S E C R E T

SECRET

APPENDIX A. (Cont'd)Part B.RECLAIMED RUBBER PLANTS IN THE FREE WORLD AREA DURING 1951²

<u>Location</u>	<u>Name of Plant</u>	<u>Design Capacity^b</u> (in long tons)	<u>Production^c</u>
<u>NORTH AMERICA</u>			
<u>CANADA</u>			
Montreal	Dominion Rubber Co.*		371,987
			5,077
* Subsidiary of U.S. Rubber Co. and the only important producer in the country.			
<u>CUBA</u>			
Mantanzas			77
<u>UNITED STATES</u>			
			365,913
Akron, Ohio	Goodyear Tire & Rubber Co.		
Akron, Ohio	Kylos Rubber Company		
New Brunswick, N.J.	Laurie Rubber Reclaiming Co.		
Naugatuck, Conn.	Naugatuck Chemical Co.		
Buffalo, N.Y.	U.S. Rubber Reclaiming Co.		
Trenton, N.J.	Neapara Rubber Co.		
Butler, N.J.	Pequamos Rubber Co.		
E. St. Louis, Ill.	Midwest Rubber Reclaiming Co.		
Memphis, Tenn.	Firestone Tire & Rubber Co.		
Gadsden, Ala.	Goodyear Tire & Rubber Co.		
Los Angeles, Calif.	Goodyear Tire & Rubber Co.		
Tuscaloosa, Ala.	B.F. Goodrich Co.		
Los Angeles, Calif.	B.F. Goodrich Co.		
Erie, Pa.	Continental Rubber Co.		
Chicago, Ill.	Dryden Rubber Co.		
Denver, Colorado	Gates Rubber Co.		
Buffalo, N.Y.	Dunlop Rubber Co.		
Barberton, Ohio	Seiberling Rubber Co.		
Passaic, N. J.	Manhattan Rubber Co.		
Painesville, Ohio	Ohio Rubber Co.		
<u>SOUTH AMERICA</u>			
			5,073
<u>ARGENTINA</u>			
			1,000
Buenos Aires	Goodyear Neumaticos SA	1,350	
Note: There are several small rubber goods manufacturers who produce small quantities of reclaimed rubber.			
<u>BRAZIL</u>			
			3,862
Santo Andre	Industria de Pneumaticos Firestone SA		
Mao Paulo	Cia Goodyear do Brasil		
<u>CHILE</u>			
			2.5
Santiago	Industria Nacional de Pneu (INSA)		
<u>COLOMBIA</u>			
Cali	Cia Croydan del Pacifico SA		N.A.

- A-4 -

SECRET

APPENDIX A. (Cont'd)

<u>Location</u>	<u>Name of Plant</u>	<u>Design Capacity^{a/}</u> <u>(in long tons)</u>	<u>Production^{b/}</u>
<u>COSTA RICA</u>			<u>6.7</u>
<u>GUATEMALA</u>			<u>20</u>
Guatemala City	Cia Guatemalteca Incatecu SA		
<u>PERU</u>			<u>18</u>
Lima	Fabrica de Calsado Peruano SA (Bata)		<u>18</u>
<u>URUGUAY</u>			<u>164</u>
Montevideo	(FUNSA) Fabrica Uruguaye de Neumaticos SA	360	
Montevideo	Radesca y Cia	N.A.	
<u>FAR EAST and SOUTH PACIFIC</u>			<u>21,988</u>
<u>AUSTRALIA</u>			<u>8,606</u>
Brisbane	Olympic Tire & Rubber Co., Ltd		
Melbourne	Kenworth Rubber Ltd.		
Sydney	Dunlop Rubber (Aust.) Ltd.		
Sydney	Goodyear Tire & Rubber Co. (Aust.) Ltd		
<u>INDIA</u>			<u>4,200</u>
Pombay	Firestone Tire & Rubber Co. of India Ltd.		
Calcutta	Bata Shoe Company		
Calcutta	Dunlop Rubber Co. (India)		
<u>JAPAN</u>			<u>11,982</u>
Kobe	Dunlop Rubber Co. (Japan) Ltd.		
Kobe	Nippon Tire Co.		
Yokohama	Yokohama Rubber Co.		
<u>NEW ZEALAND</u>			<u>1,200</u>
Auckland	Reid Rubber Tire Factory		
	Atlas Rubber Co.		
Christchurch	Firestone Tire & Rubber Co.		
(Upper Hutt)	Dunlop Rubber Co.		
<u>EUROPE including ENGLAND</u>			<u>86,821</u>
<u>AUSTRIA</u>			<u>1,956</u>
Wimpassing) Traskirchen)	Semperit		1,480.8 475.2
<u>BELGIUM</u>			<u>2,500</u>
Antwerp	Wauters		
Molines	Caoutchouc Recupere SA		
Seneffe	Caoutchouc & Ebonite		
<u>DENMARK</u>			<u>300</u>
Copenhagen	Schinning & Arve		
Copenhagen	Danske Galochs & Gummifabrik		

APPENDIX A. (Cont'd)

<u>Location</u>	<u>Name of Plant</u>	<u>Design Capacity^{a/}</u> <u>(in long tons)</u>	<u>Production^{b/}</u>
<u>FINLAND</u>			<u>331.5</u>
Nokia	Soumen Gummitehdas Oy		331.5
<u>FRANCE</u>			<u>N.A.</u>
Colombes	Watteles Regenera		
<u>GERMANY, WEST</u>			<u>27,355</u>
Hamburg-Harburg	Harburger Gummiwaren-Fabrik Phoenix AG.		3,600
Hamburg	Deutsches Gummi-Regenerierwerk Wolfgang Krohn & Co.		
Melle-Hannover	Melco K.G. Carl Boesch		
Mannheim-Rheinau	Rhein-Chemie GmbH		
Hannover	Continental Gummiwerke AG.		
Hannover	Vorwerk & Sohn		
Hanau-Main	Dunlop Rubber Co.		
<u>GREECE</u>			<u>N.A.</u>
Athens	Aristovoulos Pentsetakis		
<u>ITALY</u>			<u>2,500</u>
Milano	Pirelli		
Torino	Pirelli		
<u>NETHERLANDS</u>			<u>1,600</u>
Hague	N.V. Nederlandse B.F. Goodrich Co.		
Haarlem	N.V. Rubber, Asbest-en Ebenitfabriken		
<u>NORWAY^{d/}</u>			<u>500</u>
<u>PAKISTAN</u>			<u>100</u>
Karachi	Bata Shoe Company		32
<u>PORTUGAL</u>			<u>300</u>
Oporto	Manufatura Nacional de Borracha, SARL (MABOR)		
<u>SPAIN^{e/}</u>			<u>10,000</u>
Aso	Barakaldo		
Bilbao	Firestone Hispania		
Barcelona	J. Codina Villalonga, Fabrica de Caucho Regenerado Gomas y Amiantos		
Torrelavega	Continental Rubber Co.		
<u>SWEDEN</u>			<u>2,500</u>
Werkoping	Goodyear Tire & Rubber Co. (planned)		
Trelleberg	Tellebergs Gummifabriks		

- A-6 -

S E C R E T

APPENDIX A. (Cont'd)

<u>Location</u>	<u>Name of Plant</u>	<u>Design Capacity^{a/}</u> (in long tons)	<u>Production^{b/}</u>
<u>SWITZERLAND</u>			<u>150</u>
Alt Dorf (URI)	Doestwizler		
<u>UNITED KINGDOM</u>			<u>26,722</u>
Birmingham	Dunlop Rubber Ltd.		
Leyland	British Tire & Rubber Co. (Goodrich)		
London	Rubber Improving Co.		
Wolverhampton	Goodyear Tire & Rubber Co.		
<u>YUGOSLAVIA</u>			<u>N.A.</u>
<u>AFRICA</u>			<u>N.A.</u>
<u>SOUTH AFRICA</u>			<u>N.A.</u>
<u>GRAND TOTAL</u>			<u>486,969</u>

- a. This list of plants producing reclaimed rubber is far from complete. It is noted, however, that most large tire manufacturers also have facilities for reclaiming rubber. The importance of reclaimed rubber production has been greatly ignored in reports assessing the raw material supply of the rubber industry, and information on such facilities is meagre.
- b. Capacity figure of plants and/or of the entire country are given where available.
- c. Production of reclaimed rubber by country (and by plant when available) are given.
- d. An additional plant with 1,200 tons p.a. capacity was planned for completion by the end of 1951.
- e. There are reported to be 15 factories reclaiming rubber in Alicante alone.

- A-7 -

S E C R E T